

76. The process chamber of claim 11 wherein the exhaust tube is adapted to provide a non-circuitous flow of effluent therethrough.

77. The process chamber of claim 24 wherein the exhaust tube is adapted to provide a non-circuitous flow of effluent therethrough.

78. The process chamber of claim 26 wherein the exhaust tube is adapted to provide a non-circuitous flow of effluent therethrough.

REMARKS

Claims 1-11, 14, 15, 24 and 26-78 are pending in the application after claims 37-78 are added. Claims 1-11, 14, 15, 24, 26-31, 33, 35 and 36 have been amended.

Applicant requests entry of these amendments which are believed to be fully supported by the specification and original claims and are believed to add no new matter. For example, the amendments to claim 1 are supported at least on pages 9-12 and 17 of the specification.

Reconsideration of the present case in view of the amendments and remarks herein is earnestly requested.

Claim rejections

In the Office Action dated August 2, 2000, the Examiner rejected claims 1, 2, 6, 9 and 31 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent to Randall S. Mundt (hereafter referred to as Mundt). This rejection is traversed.

Mundt does not anticipate the claims because Mundt does not disclose each and every positively set forth element in the claims. For example, claim 1, as amended, is to a process chamber for processing a substrate in a process gas and reducing emissions

of hazardous gas to the environment having, inter alia, an exhaust tube substantially absent projections or recesses that alter the flow direction of the effluent through the exhaust tube. In contrast, Mundt discloses a reaction chamber (18) comprising projections that are taught to alter the flow direction of the effluent (see column 3 line 49 through column 4 line 11). For example, Mundt discloses a baffle member (60) positioned in the interior of the reaction chamber (18) and a tube (80) inserted axially into the reaction chamber (18) that serve as projections to redirect the flow of the effluent. Mundt describes the altered gas flow in column 7, beginning at line 9. As stated by Mundt: "baffle member 60 and tube 80 force gas to flow inwardly from inlet 26, longitudinally through an annular passageway 68 between tube 80 and baffle member 60 and back through an annular passageway 63 between the baffle member 60 and the sidewall 56 before exiting through the outlet 28." Thus, Mundt clearly has projections that alter the general flow direction of the effluent.

Mundt fails to disclose that which is claimed in claim 1 and therefore does not anticipate the claim. The claims depending from claim 1 also distinguish over Mundt for at least the same reasons as their base claim.

The Examiner also rejected claims 3-5, 8 and 32 under 35 U.S.C. 103(a) as being unpatentable over Mundt and in view of U.S. Patent 4,735,633 to Kin-Chung Chiu (hereafter referred to as Chiu). This rejection is traversed.

Mundt and Chiu do not render claims 3-5, 8 and 32 unpatentable. Claims 3-5, 8, and 32 depend from claim 1. As discussed above, claim 1, as amended, is to a process chamber for processing a substrate in a process gas and reducing emissions of hazardous gas to the environment, the chamber comprising, inter alia, an exhaust tube that is substantially absent projections that alter the general flow direction of the effluent through the exhaust tube. Mundt discloses an exhaust tube having projections, as discussed above. Chiu does not make up for the deficiencies of Mundt or teach the removal of the projections in Mundt's device. In fact, Chiu also teaches projections in the exhaust, such as a spiral electrode that alters and redirects the flow of the gas. Chiu teaches against the absence of

projections by teaching that it is desirable that "The gas flow will generally distribute around the spiral flow paths ... In addition to the spiral flow established by the spiral electrodes, there will be cross-flow established through gaps 32 ... such cross-flow helps establish uniform distribution of the effluent gas throughout the reaction chamber" (column 6, line 68 through column 7, line 9). The other embodiments taught by Chiu, namely the stacked electrodes 60, 62 and the plurality of concentric rings of upper and lower electrodes 102, 104, as shown in Figures 3 and 5, also alter the flow direction of effluent into a spiral or circular flow path, respectively (see column 7 lines 33-36).

Thus neither Mundt nor Chiu teach or suggest claim 1 and since claims 3-5, 8 and 32 include all of the limitations of claim 1, these claims also distinguish over the proposed combination of references. Therefore, the 35 USC 103(a) rejection of claims 3-5, 8 and 32 should be reversed.

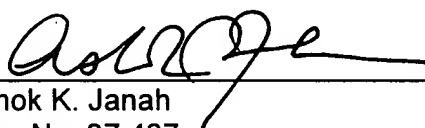
Conclusion

For the foregoing reasons, allowance of the instant application is respectfully requested. Should the Examiner have any questions regarding the above amendments or remarks, the Examiner is requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,

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